AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-15. (Canceled)

16. (Previously Presented) A semiconductor laser device with a spot-size converter comprising:

a semiconductor substrate;

a semiconductor laser region, and

a semiconductor layer;

the semiconductor laser region and the semiconductor layer being integrally formed as one unit on the semiconductor substrate in a lateral direction to emit light from the side of the semiconductor layer;

the semiconductor layer has a function of changing the spot-size in a layer direction of light emitting from a semiconductor laser by changing a refractive index of the semiconductor layer in the layer direction;

wherein the semiconductor layer is a graded index to gradually change a refractive index thereof in a layer direction.

17. (Canceled)

18. (Previously Presented) The semiconductor laser device with a spot-

size converter according to claim 16, wherein at a time of passing light emitting from the semiconductor laser region through the semiconductor layer, the spot-size of light is periodically changed or shows a behavior of a portion of the periodical changing.

19. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 16, wherein the most highest region of refractive index of the semiconductor layer is one conformed with an approximate central portion of a distribution of light emitting from the semiconductor laser region.

20. (Canceled)

21. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 18, wherein the most highest region of refractive index of the semiconductor layer is one conformed with an approximate central portion of a distribution of light emitting from the semiconductor laser region.

22. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 16, wherein on the boundary between the semiconductor layer and the semiconductor laser region, a second semiconductor layer having a substantially constant refractive index is formed.

23. (Canceled)

24. (Previously Presented) The semiconductor laser device with a spot-

size converter according to claim 18, wherein on the boundary between the semiconductor layer and the semiconductor laser region, a second semiconductor layer having a substantially constant refractive index is formed.

25. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 19, wherein on the boundary between the semiconductor layer and the semiconductor laser region, a second semiconductor layer having a substantially constant refractive index is formed.

26. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 16, wherein on the boundary between the semiconductor layer and the semiconductor laser region, a dielectric layer is formed.

27. (Canceled)

28. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 18, wherein on the boundary between the semiconductor layer and the semiconductor laser region, a dielectric layer is formed.

29. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 19, wherein on the boundary between the semiconductor layer and the semiconductor laser region, a dielectric layer is formed.

30. (Canceled)

31. (Currently Amended) A semiconductor laser device with a spot-size converter comprising:

a semiconductor substrate;

a semiconductor laser region;

a light waveguide region;

the semiconductor laser region and the light waveguide region being integrally formed as one unit on the semiconductor substrate in a lateral direction to emit light from the light waveguide region;

at a joint region between the semiconductor laser region and the light waveguide region, a semiconductor layer is buried therein;

wherein the semiconductor layer has a refractive index which is substantially ~~eostant~~constant.

32. (Canceled)

33. (Currently Amended) ~~The semiconductor laser device with a spot-size converter according to claim 31,~~ A semiconductor laser device with a spot-size converter comprising:

a semiconductor substrate;

a semiconductor laser region;

a light waveguide region;

the semiconductor laser region and the light waveguide region being integrally formed as one unit on the semiconductor substrate in a lateral direction to emit light from the light waveguide region;

at a joint region between the semiconductor laser region and the light waveguide region, a semiconductor layer is buried therein;

wherein the semiconductor layer has a refractive index which is changed continuously in a layer direction or varied step wise.

34. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 31, wherein the most highest region of refractive index of the semiconductor layer is one conformed with an approximate central portion of a distribution of light emitting from the semiconductor laser region, and with an approximate central portion of an intrinsic mode of the light waveguide region.

35. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 31, wherein on the boundary between the semiconductor layer and the semiconductor laser region and/or the boundary between the semiconductor layer and the light waveguide region, another semiconductor layer having a refractive index which is substantially constant is formed.

36. (Canceled)

37. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 33, wherein on the boundary between the semiconductor layer and the semiconductor laser region and/or the boundary between the semiconductor layer and the light waveguide region, another semiconductor layer having a refractive index which is substantially constant is formed.

38. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 34, wherein on the boundary between the semiconductor layer and the semiconductor laser region and/or the boundary between the semiconductor layer and the light waveguide region, another semiconductor layer having a refractive index which is substantially constant is formed.

39. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 31, wherein on the boundary between the semiconductor layer and the semiconductor laser region and/or the boundary between the semiconductor layer and the light waveguide region, a dielectric layer is formed.

40. (Canceled)

41. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 33, wherein on the boundary between the

semiconductor layer and the semiconductor laser region and/or the boundary between the semiconductor layer and the light waveguide region, a dielectric layer is formed.

42. (Previously Presented) The semiconductor laser device with a spot-size converter according to claim 34, wherein on the boundary between the semiconductor layer and the semiconductor laser region and/or the boundary between the semiconductor layer and the light waveguide region, a dielectric layer is formed.